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TITLE: SIGNAL MODULATION TYPE SOLID STATE LIGHT
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ABSTRACT:

PURPOSE: To independently perform a light irradiating intensity modulation and a light irradiation wavelength modulation by forming electrodes for generating a surface acoustic wave on a piezoelectric material substrate, and forming metal/insulator/metal tunnel junction in a surface acoustic wave generating region for generating it by the electrode.

CONSTITUTION: Electrodes for generating a surface acoustic wave represented by interdigital electrodes (SAW electrodes) 2 are formed on a piezoelectric material substrate 1. A tunnel junction made of

metal/insulator/metal, such as
Au/Al<SB>2</SB>O<SB>3</SB>/Al, or Ag/MgO/Mg is formed in the surface
acoustic
wave generating region for generating it by the electrodes 2 to
supply a
current to the tunnel junction. Thus, a wide range from a visible
light to
near infrared light of light irradiating wavelength range is obtained
to
improve polarizing characteristic, and light irradiating intensity
modulation
and light irradiating wavelength modulation can be independently
performed.

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